

ABSTRACT

Current communication system can not be separated from the use of Radio Frequency (RF). because its source and wide spread, signals can be used to produce alternative energy. Rectenna technology make it happen, that is the integrated of antenna and rectifier. The antenna used to receive the RF signals from the free space, then rectifier convert to DC voltage.

In this final project designed and realized of rectenna that working in the frequency range 800 MHz - 2500 MHz using a coplanar vivaldi antenna (Tapered Slot Antenna) and 5-stage Voltage doubler rectifier circuit with BAT17 diode.

From the result of test and measurement show that rectenna can convert AC signal into output DC voltage. The antenna best on work at 900 MHz with VSWR of 1.3 and a gain of 3.86 dBi. The average maximum output voltage generated by rectenna is 900 MHz with a power level of 10 dBm of 474.2 mV at distance of 30 cm, 345.53 mV at a distance of 1m and 208.27 mV at a distance of 1.5 m.

Keywords : RF, Rectenna, Vivaldi, Rectifier